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September 1982

Dairy

OUTLOOK & SITUATION

Table 1—U.S. Dairy situation at a glance

Item	Unit or base period	Quarterly data					
		2nd 1980	2nd 1981	3rd 1981	4th 1981	1st 1982	2nd 1982
Production and cow numbers:							
Total milk	Mil. lb.	34,056	35,140	33,086	31,982	33,005	35,512
Milk per cow	Lb.	3,157	3,226	3,029	2,913	2,999	3,226
Number of milk cows	Thou.	10,788	10,892	10,925	10,981	11,005	10,985
Prices received by farmers:							
All milk, sold to plants, 100 pounds	Dol.	12.60	13.53	13.53	14.00	13.77	13.23
Percentage of parity[1]	Pct.	73	70	69	67	65	65
Manufacturing grade milk, 100 pounds	Dol.	11.73	12.60	12.47	12.97	12.83	12.50
Parity equivalent	Dol.	15.75	17.92	17.95	17.89	18.68	18.88
Fat content	Pct.	3.60	3.60	3.57	3.81	3.77	3.62
Minnesota-Wisconsin (3.5% fat), 100 pounds	Dol.	11.67	12.61	12.49	12.53	12.49	12.43
Milk eligible for fluid market, 100 pounds	Dol.	12.73	13.70	13.73	14.20	13.97	13.43
Price ratio and dairy ration value:							
Milk-feed	Lb.	1.53	1.37	1.44	1.54	1.54	1.48
Value of concentrate ration fed, beginning	Dol.	7.03	8.30	8.21	7.73	7.60	7.50
Farm cash receipts from dairy products	Mil. dol.	4,253	4,714	4,450	4,446	4,514	4,667
Production of factory products:							
Butter	Mil. lb.	322.8	328.6	250.2	302.3	368.6	332.9
American cheese, whole milk	Mil. lb.	667.0	740.2	619.1	611.1	655.6	740.9
Cheese, other than American	Mil. lb.	390.0	410.8	398.4	426.6	393.6	437.8
Canned milk, unskimmed	Mil. lb.	204.0	200.2	194.6	193.6	173.3	195.0
Dry whole milk	Mil. lb.	19.6	22.7	23.3	26.3	26.6	29.2
Frozen products[2]	Mil. gal.	320.6	326.7	348.0	244.8	251.1	334.7
Creamed cottage cheese	Mil. lb.	213.9	204.7	197.8	176.3	184.0	197.2
Total (milk-equivalent, fat-solids-basis)[3]	Mil. lb.	19,969	21,041	18,489	17,626	19,414	21,419
Nonfat dry milk, human use	Mil lb.	383.5	392.8	325.6	291.4	336.6	417.2
Wholesale prices:							
Butter, Grade A, Chicago, pound	Ct.	136.7	147.4	148.2	149.2	147.6	147.3
Cheese, American (40-pound blocks), f.o.b. Wisconsin assembling points, pound	Ct.	13.11	138.9	139.2	140.6	137.7	137.2
Evaporated milk, case	Dol.	19.77	21.70	21.70	21.90	21.99	22.02
Dry whole milk, pound	Ct.	108.9	118.4	118.2	118.6	118.4	N.A.
Nonfat dry milk, pound	Ct.	87.6	92.9	92.9	93.4	93.3	93.0
Dairy products (BLS)	1967=100	228.5	245.2	245.3	247.2	247.9	248.5
Retail prices (BLS):							
Consumer price index[4]	1967=100	245.0	269.0	276.7	280.7	283.0	287.3
All food[4]	1967=100	250.5	273.0	277.2	277.5	282.4	285.7
All dairy products[4]	1967=100	225.3	243.7	244.1	245.0	246.3	246.9
Fluid milk and cream	12/77=100	126.3	134.8	134.7	134.9	135.3	135.6
Whole milk	1967=100	207.3	220.6	220.3	220.7	221.5	221.8
Other	12/77=100	125.1	134.6	134.8	135.1	135.3	135.8
Manufactured dairy products	12/77=100	128.8	142.0	142.7	143.6	144.7	145.2
Butter	1967=100	222.4	244.9	246.4	248.0	249.4	250.7
Cheese	12/77=100	127.6	140.5	140.8	141.0	142.7	143.6
Frozen desserts	12/77=100	131.4	146.4	148.1	149.8	150.1	149.7
Other	12/77=100	125.8	136.0	136.5	138.5	139.3	139.4
Margarine	1967=100	247.7	256.1	256.9	255.8	257.1	260.2
Stocks, end of quarter:							
Creamery butter	Mil. lb.	295.9	507.5	489.5	429.2	447.8	540.3
Cheese, total[5]	Mil. lb.	603.1	928.7	982.1	975.8	897.8	1,004.1
Canned milk, unskimmed	Mil. lb.	116.3	77.6	102.1	46.8	48.2	90.6
Dry whole milk	Mil. lb.	6.3	3.6	3.0	6.0	6.9	9.6
Total (milk-equivalent, fat-solids-basis)[6]	Mil. lb.	12,020	19,534	19,813	18,377	18,020	20,871
Nonfat dry milk	Mil. lb.	548.4	733.1	809.0	889.7	975.6	1,132.4
Commercial disappearance:							
Creamery butter	Mil. lb.	161.3	214.3	222.9	243.2	213.4	215.9
Cheese, American	Mil. lb.	501.6	508.9	536.5	548.4	534.7	521.5
Cheese, other than American	Mil. lb.	424.7	446.1	457.4	528.6	444.8	472.1
Canned milk, unskimmed	Mil. lb.	160.7	159.2	167.1	246.0	170.1	149.5
Milk in all products	Mil. lb.	28,732	30,172	31,622	30,482	28,425	30,903
Nonfat dry milk	Mil. lb.	79.4	86.2	155.4	118.0	94.4	169.6
USDA net removals:							
Butter	Mil. lb.	157.0	126.9	36.8	44.4	164.1	132.1
Cheddar cheese	Mil. lb.	118.3	219.9	137.1	73.2	127.9	220.1
Nonfat dry milk	Mil. lb.	252.4	287.4	199.7	174.6	235.0	309.3
Evaporated milk	Mil. lb.	3.7	4.9	4.7	4.0	3.9	5.5
Total (milk-equivalent, fat-solids-basis)	Mil. lb.	4,419	4,804	2,123	1,648	4,660	4,914

[1]Seasonally adjusted prices as percentage of parity price. [2]Ice cream, ice milk, and sherbet. [3]Includes manufactured products for which current data are available. [4]For all urban consumers starting January 1978. [5]Natural, plus process American cheese held by CCC. [6]Excludes cream and bulk condensed milk. N.A. = not available.

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The next *Dairy Outlook & Situation* will be published in December.

Summary

The support price on October 1 will remain $13.10 per cwt for manufacturing grade milk with 3.67 percent fat ($12.80 at 3.5 percent fat). This support is the minimum allowed under new dairy legislation contained in the Omnibus Budget Reconciliation Act of 1982. It is the same support price that was put into effect October 1, 1980. In addition, as authorized by the new legislation, the Secretary of Agriculture will implement a 50-cent-per-cwt deduction for all milk marketed beginning December 1.

Milk production during the second quarter increased 1.1 percent from a year earlier. The gain was due to 93,000 (0.9 percent) more milk cows and an increase in output per cow of 7 pounds (0.2 percent) from a year earlier. Available data for the third quarter, mostly Federal order receipts for July and August, imply that production will be up about 3 percent. In the fall, with the number of dairy herd replacements per 100 cows record large, some expansion in the herd may occur. In addition, the milk-feed price relationship is expected to continue very attractive for heavy concentrate feeding.

Thus, year-over-year gains in output per cow will likely occur. As a result, milk production is expected to continue to increase, as it has since mid-1979. This year's pro-

duction will likely be 1.5 to 2 percent above the record 132.6 billion pounds in 1981.

The recent dairy legislation, enacted on September 8, sets $13.10 per cwt as the minimum support price for the marketing years beginning October 1, 1982, and October 1, 1983. For the marketing year beginning October 1, 1984, the minimum support will be the level of parity that $13.10 represents on October 1, 1983. In addition, effective October 1, 1982, to September 30, 1985, the Secretary of Agriculture may provide that 50 cents per cwt be deducted from the proceeds of the sale of all milk marketed commercially by producers, if net price support purchases for the marketing year are expected to equal or exceed 5 billion pounds milk equivalent. The funds will be remitted to the Commodity Credit Corporation (CCC) to offset part of the milk price support program's cost. Effective April 1, 1983, to September 30, 1985, the Secretary may provide for deduction of an additional 50 cents per cwt, if net marketing year purchases are expected to go over 7.5 billion pounds milk equivalent. At the same time, though, a program must be established to refund their second 50-cent deduction to producers who lower their output by a specified amount.

Dairy farmers' reactions to the December 1 and authorized April 1 deductions will play a key role in determining 1983's milk production. The deductions add further uncertainty to other economic factors—low feed prices, large forage supplies, and unfavorable farm and non-farm alternatives. If farmers react quickly to the deductions, production for 1983 is likely to be about unchanged from this year. If, however, producers delay reacting until after next spring's flush production period, 1983 output will show a sizable increase from this year.

Prices received by farmers for all-milk reached a seasonal low in June and have risen slightly since. For first-half 1982, the all-milk price averaged 1.8 percent below a year earlier. Farm milk prices should rise seasonally between August and December; reasons include an improved economy, a normal increase in fat content, and a higher fluid milk utilization rate caused by seasonally lower production. However, because the support price has not changed, the all-milk price is expected to be the same this fall as last. By mid-1983, the effective returns per cwt received by farmers for milk could decline more than 7 percent from a year earlier, given the 50-cent deduction beginning December 1 and assuming another 50-cent deduction starting April 1.

Wholesale prices for butter, cheese, and nonfat dry milk continue stable. They have been nearly unchanged since October 1980 because supplies are more than ample and the CCC support purchase prices are unchanged. Since the support price and the support purchase prices will not increase this fall and the 50-cent deductions have no direct effect on processor costs for milk, wholesale dairy product prices are expected to be near current levels through mid-1983. Retail dairy product prices are expected to average 1 to 2 percent higher this year than in 1981, because of higher farm-to-retail marketing costs. They will likely increase somewhat again in 1983, also because of higher farm-to-retail costs.

Total use of manufactured and fluid dairy products during first-half 1982, on a milk-equivalent, fat-solids-basis, increased 2.2 percent from a year earlier. Although first-half use increased more than milk production—1.3 billion pounds versus 1.0 billion—USDA purchases stayed at year-earlier levels because of reductions in commercial stocks. USDA stocks are continuing to grow, since Government purchases are larger than distributions.

During January-July, imports on a milk-equivalent, fat-solids-basis were up 12 percent from a year before. But, they were still less than 2 percent of U.S. production. The outlook for 1983 indicates that world milk production will likely be up about 1 percent.

Dairy Situation

PRICES AND INCOME

New Dairy Legislation Enacted

The provisions of the Agricultural Act of 1949 were amended on September 8 by the Omnibus Budget Reconciliation Act of 1982. The amended law now sets the minimum level of support for the marketing years beginning October 1, 1982, and October 1, 1983, at $13.10 per cwt for manufacturing grade milk of average test—3.67 percent fat ($12.80 for 3.5 percent fat). For the marketing year beginning October 1, 1984, the minimum level of support will be the level of parity that $13.10 represents on October 1, 1983.

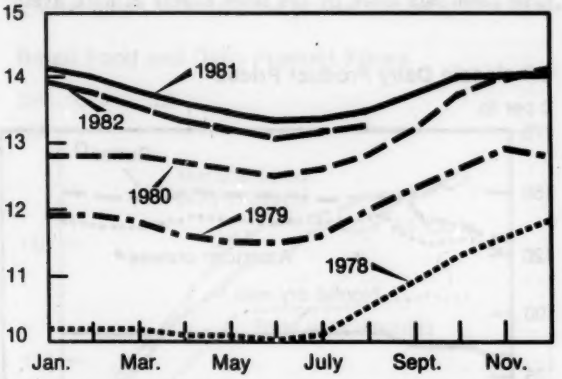
In addition, effective October 1, 1982, to September 30, 1985, the Secretary of Agriculture may provide that a deduction of 50 cents per cwt from the proceeds of sale of all milk marketed commercially, provided that net price support purchases for the marketing year are expected to equal or exceed 5 billion pounds milk equivalent. The funds will be remitted to the CCC to offset part of the cost of the milk price support program. Effective April 1, 1983, to September 30, 1985, the Secretary may provide for deduction of an additional 50 cents per cwt, if net marketing year purchases are expected to be more than 7.5 billion pounds milk equivalent. At the same time, though, a program must be established to refund to the producers, who adjust their marketings by a specified amount, the funds resulting from their second 50-cent deduction.

Under provisions of the new law, USDA announced that it will set the support price for manufacturing milk at the minimum on October 1 and that it will also implement a 50-cent-per-cwt deduction on December 1, 1982. With no change in the support price, there will be no change in CCC purchase prices. Butter at Chicago will still be $1.49 per pound and at New York City $1.52. Nonfat dry milk will remain at 94 cents per pound, plus 1.25 cents if fortified. Cheese in 40-pound blocks will be 139.5 cents per pound, less 3 cents in 500-pound barrels.

Table 2—Milk prices received by farmers

Month	All sold to plants				Manufacturing grade			
	1979	1980	1981	1982	1979	1980	1981	1982
	Dollars per cwt							
January	11.90	12.80	14.10	13.90	10.90	11.70	13.00	13.00
February	11.90	12.80	14.00	13.80	10.80	11.70	12.90	12.80
March	11.80	12.80	13.80	13.60	10.80	11.80	12.80	12.70
April	11.60	12.70	13.70	13.40	10.80	11.80	12.70	12.60
May	11.50	12.60	13.50	13.20	10.80	11.70	12.60	12.50
June	11.50	12.50	13.40	13.10	10.70	11.70	12.50	12.40
July	11.60	12.60	13.40	13.20	10.80	11.60	12.40	12.30
August	12.00	12.80	13.50	13.30	11.10	11.80	12.40	12.30
September	12.30	13.20	13.70		11.40	12.20	12.60	
October	12.60	13.70	14.00		11.60	12.70	12.90	
November	12.90	14.00	14.00		11.70	12.90	13.00	
December	12.80	14.10	14.00		11.70	13.00	13.00	
Average	12.00	13.00	13.80		11.10	12.00	12.70	

Milk Prices*



*U.S. average price received by farmers for deliveries to plants and dealers.

USDA Neg. ERS 5449-82(9)

Farm Milk Prices Continue Below 1981

Prices received by dairy farmers for milk in August were down seasonally from the January level and were also below a year earlier (table 2). The drop from January reflects the lower fat content of August milk compared with January and lower fluid utilization proportions. The price decline from a year earlier was primarily the result of continued surplus production.

August prices for manufacturing grade milk averaged $12.30 per cwt—down 70 cents (4.6 percent) from January. Relative to a year earlier, prices were down 10 cents (1 percent). In contrast, August 1981 prices averaged 60 cents (5 percent) higher than a year earlier—due to the change in the support price on October 1, 1980. The August 1982 farm price after adjusting to 3.67-percent fat test was $12.51 a cwt, 59 cents below support. August marked the 29th consecutive month that manufacturing grade milk prices (adjusted for fat content) failed to reach support.

During the past several months, minimum Class I prices in Federal order markets have been quite stable. From April through September, these prices were within a range of only 4 cents per cwt. In October, the average Class I price will be $14.59, up 2 cents from September but down 2 cents from October of last year. Over-order prices negotiated by cooperative associations have also been relatively stable in recent months. As a result, the estimated average over-order payment in Federal order markets during September is 58 cents, the same as August and within 2 cents of the average over-order payments registered in each of the previous 4 months.

The tentative Class II price in 29 Federal order markets for October is $12.54 per cwt. Based on testimony received at a public hearing, USDA has determined that a similar procedure for announcing Class II prices should be incorporated in 14 additional markets. The procedure provides for announcing a tentative Class II price for the month by the 15th of the preceding month. The tentative Class II price for the month is based on the Minnesota-Wisconsin (M-W) price for the second preceding month (the latest available at the time of the announcement), updated by a formula based on changes in prices of selected manufactured dairy products. Added to this updated price would be a Class II differential computed from a 12-month moving average of Class II differentials. In general, this procedure will result in a Class II price about 10 cents above the Class III or M-W price in six of the additional 14 markets, the same procedure as previously adopted in 29 markets. The Class II price will exceed the Class III or M-W price by about 15 cents in five of the additional markets and by about 25 cents in three markets. In any case, the final Class II price cannot be less than the Class III or M-W price for the month, so the final Class II price is announced on the 5th of the following month when the M-W for the month is known. In the three northwest markets, which have a butter-powder snubber price, a further adjustment may be necessary. Whenever the Class III price is based on the butter-powder snubber, the final Class II price is reduced by the difference between the snubber and the M-W price. It is anticipated that the amended orders, if approved by producers, will become effective by year's end.

Prices received by farmers in August for all-milk averaged $13.30 per cwt, down 1.5 percent (20 cents) from a

year earlier and seasonally down by 4.3 percent (60 cents) from January. Adjusted to 3.67-percent fat test, the all-milk price in August was $13.58 per cwt, 11 cents below the adjusted January level.

For the first half of 1982, the all-milk price averaged 1.8 percent below a year earlier. With no change in the support price on October 1 the all-milk price will still rise seasonally between August and December and be about equal with a year earlier. Reasons include an improved economy, a normal increase in fat content, and a higher fluid milk utilization rate caused by seasonally lower production. However, it should be noted that the reported prices received by farmers for all-milk (as well as other milk prices published by SRS) will not reflect the 50-cent deductions beginning December 1, 1982, and the authorized April 1 deductions. Thus, given the deductions starting December 1 and assuming the authorized April 1 deductions are put into effect, the effective returns per cwt received by farmers for milk by mid-1982 could decline more than 7 percent from a year earlier.

1982 Cash Receipts May Be Unchanged

First-quarter cash receipts from milk sales were estimated to have increased 0.4 percent from 1981. This change was attributable to the nearly 2 percent larger marketings, since farm milk prices were lower. During the second quarter, receipts were down about 1 percent, despite a 1-percent gain in marketings. In the current quarter receipts are expected to be up 1 to 2 percent, followed by a small decline in the fourth quarter. For the year, total cash receipts are expected to be nearly unchanged—the first time since 1963 that they have not increased.

During first-half 1983 cash receipts may be up slightly, because of no expected change in milk prices and some increase in marketings. However, farmers' net income will be lower due to the 50-cent-per-cwt deductions.

Cost of production (direct costs plus ownership costs) for the dairy enterprise averaged $13 per cwt of milk in 1981, compared with $12.20 in 1980. Returns to operator and family labor and management averaged $1.97 per cwt in 1981, compared with $2.13 in 1980. For additional informaton about cost and returns, see the special article in this issue.

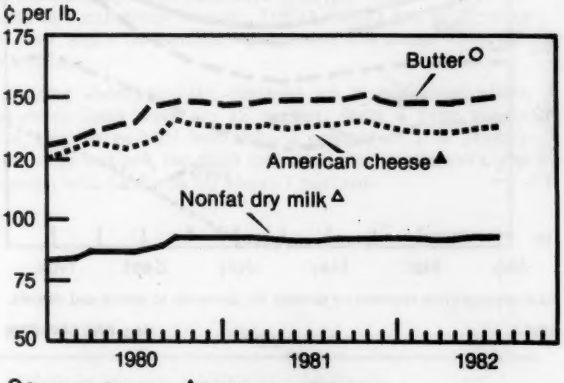
Wholesale Price Gains Small

The August wholesale price index for all dairy products equaled 249.0 (1967=100) according to the Bureau of Labor Statistics (BLS). This represents only a 1.5-percent increase from last August and just a 0.5 percent increase from January (table 3). With no change in CCC purchase prices, these stable wholesale prices are expected to continue through the end of 1982 and into 1983. Nationally, the wholesale price index increased the most for cheese, which was 1.6 percent higher in August than a year earlier. Whole milk and butter indexes increased 1.4 and 1.2 percent, respectively, while the wholesale price index for nonfat dry milk declined slightly from July 1981 to July 1982.

The August wholesale price of Grade A butter (Chicago) was approximately $1.48 per pound, virtually unchanged since January. With no support price increases for butter this fall, 1982's average wholesale price may be very close to 1981's. In August, the price of cheddar cheese in 40-pound blocks at Wisconsin assembly points averaged slightly below $1.38 per pound, 1 percent lower than a year earlier. The price peaked in November 1981 at $1.41 and declined steadily through July, then increased a fraction of a cent in August. The price of nonfat dry milk in the Central States market declined slightly (0.4 cent) between January and May, improved to 93.1 cents in June, but has been unchanged since.

Increases in the wholesale prices of dairy products have been held down by the large supply of milk avail-

Wholesale Dairy Product Prices



○ Grade AA Chicago. △ High-heat, central-states.
▲ 40-lb. block, Wisconsin assembly points.

USDA

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Table 3—Wholesale dairy product prices and index

Item	Unit	1980	Jan. '81	August '81	1981	Jan. '81	August '82
Butter, A, Chicago	cents/lb	139.34	147.25	148.03	147.99	147.53	148.07
Cheese, 40-lb blocks, Wisconsin assembly points	cents/lb	133.04	139.32	139.26	139.44	138.31	137.76
Nonfat dry milk, Central States, high heat	cents/lb	88.40	93.39	92.81	93.11	93.28	93.12
Wholesale Price Index (all dairy products)	(1967=100)	230.6	244.7	245.3	245.6	247.7	249.0
Fresh whole milk	(1967=100)	183.0	193.6	194.2	194.4	196.5	198.2
Butter	(1967=100)	211.5	223.7	224.8	225.6	225.6	227.4
Cheese	(1967=100)	292.7	309.0	308.5	309.4	312.3	313.4
Nonfat dry milk	(1967=100)	[1]438.0	467.6	460.3	462.6	464.0	461.5
Ice cream	(1967=100)	212.4	230.7	233.6	232.8	233.9	235.1

[1] 11 month average—data for November 1980 not available.

able for manufacturing and the absence of support price increases. Small gains in wholesale prices may result this fall as processors, manufacturers, and wholesalers pass on higher marketing costs.

Retail Price Gains Continue Small

Retail price increases in dairy products have, like wholesale price increases, been below year-earlier rates of gain. The August BLS retail price index for all dairy products increased 1.5 percent from a year earlier, whereas in August 1981 retail dairy prices were 6.1 percent higher than a year earlier (table 4). In addition, when compared with the rise from a year earlier of 3.6-percent in the August index for all food, the retail dairy price increase was quite modest. Fluid product prices were stationary, increasing less than 1 percent. Retail price indexes for manufactured dairy products rose, in general, between 2 and 3 percent.

Fluid milk prices at the retail level changed little between August 1981 and August 1982 (table 5). The price of whole milk averaged between $1.12 and $1.13 per half gallon, while skim and lowfat milk averaged $.98 and $1.06 per half gallon, respectively.

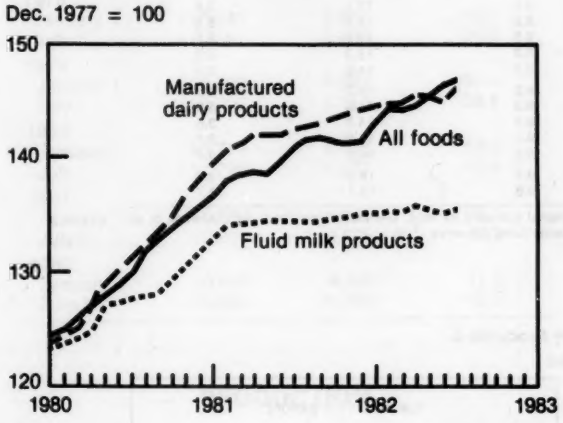
Retail prices of manufactured dairy products showed greater gains, reflecting the smaller portion of total costs attributed to raw milk. The average retail price of butter (salted, Grade AA stick) increased from $2.00 per pound in August 1981 to $2.06 this August, for a 3-percent average increase. Ice cream (prepackaged, bulk) exhibited the same trend, increasing 4 percent between August 1981 and August 1982 to about $2.10 per half gallon. Yogurt prices fluctuated more than other dairy products, but still averaged 2.6 percent higher in August than a year earlier.

Table 4—Retail price index[1]

Consumer Price Index	Index base	Year 1980	August 1981	Year 1981	August 1982
All food	1967=100	246.8	274.4	272.3	292.2
All dairy products	1967=100	254.6	276.2	274.6	287.4
Fluid milk and cream	12/77=100	127.0	134.9	134.5	135.4
Whole milk	1967=100	208.4	220.7	220.2	221.2
Other	12/77=100	126.3	134.9	134.5	136.0
Manufactured dairy products	12/77=100	130.6	142.5	142.2	146.3
Butter	1967=100	228.0	245.8	245.5	252.1
Cheese	12/77=100	129.5	140.7	140.3	144.8
Frozen desserts	12/77=100	132.8	147.7	147.3	150.6
Other	12/77=100	126.4	136.6	136.3	140.7

[1]For all urban consumers.

Retail Food and Dairy Product Prices



1981 Dairy Expenditures Up 7 Percent

Consumers spent $40.3 billion for dairy products during 1981, up 7.3 percent from 1980 (table 6). Most of this increase was a result of higher prices rather than increased sales—commercial disappearance of milk used in all products (milk equivalent basis) increased less than 1 percent in 1981. Expenditures away from home increased proportionately more than purchases for home consumption. Away-from-home expenditures accounted for 35 percent of all expenditures for dairy products,

Consumer expenditures for dairy products

Item	1979	1980	1981
		Billion dollars	
At-home	22.9	25.1	26.3
Away-from-home	10.3	12.5	14.0
Public eating places	7.6	9.3	10.6
Institutions	2.7	3.1	3.4
Total	33.2	37.6	40.3

Table 5—Retail dairy product prices

Item	Unit	Jan. 1981	April 1981	August 1981	Avg. 1981	Jan. 1982	April 1982	August 1982
Milk, fresh whole, fortified	$ per 1/2 gal	1.104	1.116	1.117	1.117	1.134	1.127	1.122
Milk, fresh skim	$ per 1/2 gal	.954	.974	.981	.976	.988	.983	.983
Milk, fresh lowfat	$ per 1/2 gal	1.070	1.070	1.064	1.065	1.072	1.065	1.064
Butter, salted Grade AA, sticks	$ per lb	1.992	1.991	1.998	1.993	2.019	2.050	2.057
Ice cream, prepackaged, bulk, regular	$ per 1/2 gal	1.938	2.024	2.014	2.016	2.128	2.089	2.095
Yogurt, natural fruit flavored	$ per 1/2 pt	.491	.492	.498	.500	NA	.499	.511

NA = Not available.

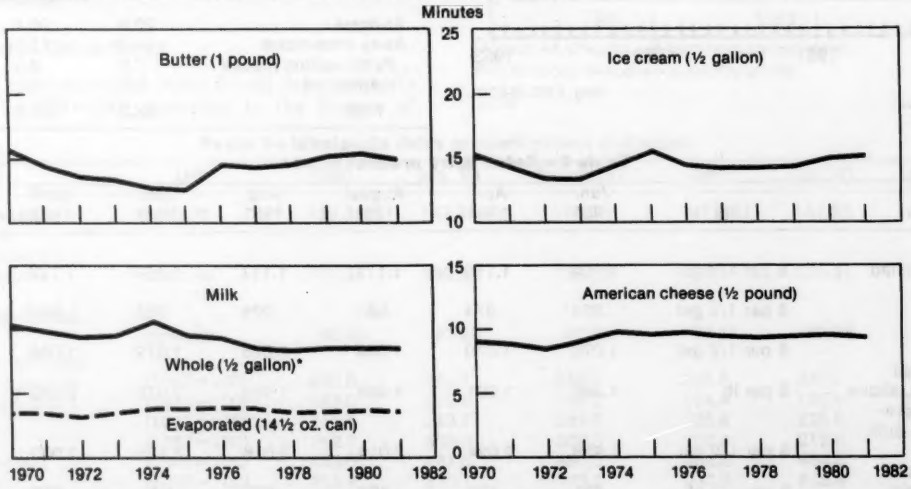
Table 6—Consumer expenditures for food and dairy products, income, and labor required to purchase specified dairy products, selected years, 1950-81

Year	Consumer expenditures			Disposable personal income	Hourly wage rate[2]
	For all foods[1]	For dairy products			
		Amount	Percentage all food		
	Billion dollars	*Million dollars*	*Percent*	*Billion dollars*	*Dollars*
1950	46.0	8,157	17.7	205.4	1.44
1955	58.1	10,301	17.7	273.3	1.86
1960	70.5	12,098	17.2	352.0	2.26
1965	85.8	13,049	15.2	475.8	2.61
1970	119.6	16,729	14.0	695.3	3.35
1971	123.4	15,176	12.3	751.8	3.57
1972	132.4	17,957	13.6	810.3	3.82
1973	147.9	19,294	13.0	914.5	4.09
1974	167.5	21,823	13.0	998.3	4.42
1975	195.2	23,316	12.6	1,096.1	4.83
1976	200.4	26,386	13.2	1,194.4	5.22
1977	217.4	27,441	12.6	1,314.0	5.68
1978	240.9	29,606	12.3	1,474.0	6.17
1979	272.2	33,174	11.9	1,650.2	6.89
1980	300.0	37,600	12.1	1,824.1	7.27
1981[3]	329.1	40,335	12.2	2,029.1	7.99

Year	Time worked to earn money to purchase[4]				
	Butter, 1-*lb.*	Milk at stores 1/2-*lb.*	American cheese, 1/2-*lb.*	Ice cream, 1/2-gal.	Evaporated milk, 14-1/2-oz. can
			Minutes		
1950	29.6	15.8	11.7	[5]35.6	5.1
1955	22.5	13.8	10.2	26.6	4.3
1960	19.5	12.8	9.0	22.2	4.1
1965	17.3	10.9	8.7	18.1	3.5
1970	15.5	10.3	9.0	15.1	3.4
1971	14.5	9.9	8.9	14.4	3.3
1972	13.7	9.4	8.5	13.5	3.1
1973	13.4	9.6	8.9	13.3	3.3
1974	12.8	10.4	9.9	14.6	3.9
1975	12.7	9.6	9.5	15.2	3.8
1976	14.7	9.3	9.9	14.6	3.9
1977	14.3	8.7	9.4	14.3	3.8
1978	14.5	8.4	9.3	14.2	3.7
1979	15.1	8.6	9.6	14.6	3.7
1980	15.5	8.7	9.7	15.0	3.8
1981[3]	15.0	8.4	9.6	15.1	3.7

[1]Excludes alcoholic beverages, food donated by the Government, nonpersonal spending for food, and institutional food use. [2]Average of all manufacturing industries. [3]Preliminary. [4]Based on hourly wage rates of all manufacturing industries. [5]1951.

Minutes Worked Earning Money to Buy Selected Dairy Products △



△ Data are based on hourly wage rates of all manufacturing industries. *Bought at stores.

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increasing 2 percentage points in 1980 and again in 1981.

Less Work Time Required To Purchase Dairy Products

In 1981, wages rose 9.9 percent while retail prices of dairy products increased 7.1 percent. As a result, the average wage earner in all manufacturing industries had to work fewer minutes to earn money to purchase dairy products. For example, it took 15 minutes to earn the money to buy a pound of butter in 1981, down from 15.5 minutes in 1980. There were similar decreases in the work time required to purchase fresh whole milk, American cheese, and evaporated milk. Counter to this general direction was the small gain in the work time required to purchase ice cream, a result of the higher sugar prices in 1981. With retail dairy prices expected to be up less than 2 percent in 1982, the time needed to purchase most dairy items will again decline.

Milk cows and replacements, 1979-82

Date	Milk cows (1,000 head)	Replacement heifers, 500 pounds and over	
		Number	Number per 100 cows
1978			
January 1	10,896	3,886	35.7
July 1	10,761	3,955	36.8
1979			
January 1	10,790	3,932	36.4
July 1	10,700	4,115	38.4
1980			
January 1	10,779	4,158	38.6
July 1	10,798	4,377	40.5
1981			
January 1	10,860	4,345	40.0
July 1	10,899	4,628	42.5
1982			
January 1	10,998	4,530	41.2
July 1	10,980	4,780	43.5

PRODUCTION

Ratio of Replacements Record Large

On July 1, dairy herd replacement heifers (500 pounds and over) totaled 4.8 million head, up 250,000 from January 1 and 152,000 more than a year earlier. The July 1 ratio of replacements to cows in the dairy herd was 43.5 per 100, compared with the previous record level of 42.5 per 100 on July 1, 1981.

Meanwhile, milk cows on farms numbered about 11 million head on July 1, a decline of 18,000 (0.2 percent) from January 1. This slight decline was the result of culling rates that were apparently very heavy. Assuming that one-third of the January 1 replacements entered the herd during January-June, almost 14 percent of the January 1, 1982, cow inventory left the herd—1.53 million head. In contrast, during January-June 1981 about 13 percent of the January 1, 1981, cow inventory left the herd—1.41 million head. In other words, 120,000 more dairy cows were likely culled during January-June 1982 than the same period a year earlier.

Milk/feed price ratio[1]

Month	1979	1980	1981	1982
	Pounds			
January	1.62	1.54	1.39	1.55
February	1.59	1.57	1.39	1.54
March	1.58	1.55	1.41	1.52
April	1.56	1.55	1.39	1.50
May	1.53	1.53	1.35	1.46
June	1.51	1.50	1.36	1.48
July	1.43	1.47	1.40	1.47
August	1.51	1.42	1.43	1.49
September	1.54	1.39	1.48	1.56
October	1.55	1.42	1.53	
November	1.59	1.40	1.56	
December	1.54	1.38	1.54	
Average	1.55	1.48	1.44	

[1]Pounds of 16% protein ration equal in value to 1 pound of milk.

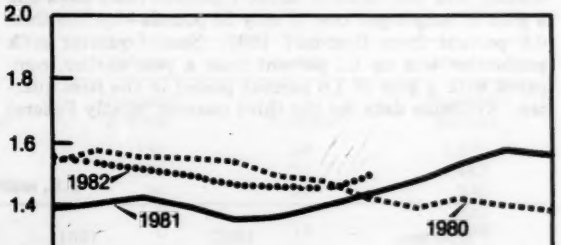
Feed Prices Continue Below Last Year

From mid-spring until late July, the prices of major dairy feed ingredients weakened slightly in response to improving crop production conditions, lower export demand, and larger carryover stocks. Then in late summer, when it became apparent that the feed grains and soybean crops would be record large, prices fell sharply. For example, corn at the farm averaged $2.60 per bushel in May and declined to $2.50 in July, but from mid-July to mid-August the price dropped to $2.19. Soybean prices also declined from an average of $6.27 per bushel in May to $5.99 in July, then fell sharply to $5.39 in mid-August. Soybean meal prices (44-percent protein, Decatur) displayed a similar pattern, moving from $194 a ton in mid-May to $184.50 in mid-July and then to $161.50 in mid-August.

Reflecting part of the decline of the ingredient prices from mid-spring to late July, the price of 16-percent protein dairy ration in mid-August was $177 a ton, down only $4 from mid-May. However, when the ration price drop was coupled with a slight gain in the all-milk price from May to August, the milk-feed price relationship improved from 1.46 in May to 1.50 in August.

The price received by farmers for corn is likely to remain below year-earlier levels for the rest of this year

Milk-Feed Price Ratio*



*Pounds of 16% protein ration equal in value to one pound of milk sold to plants and dealers.

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and well into 1983. The 1982/83 corn crop is forecast to be a record 8.3 billion bushels (based on September 1 conditions), and when it is combined with expected carryover stocks of 2.2 billion bushels, total supplies of corn will also be record large at 10.5 billion. Corn prices, estimated to average $2.45 this year, may range between $2.35 and $2.55 in 1982/83.

A record crop is also forecast for soybeans. For 1982/83, total soybean production is projected to be 2.3 billion bushels (based on September 1 conditions), and as a result supplies could be record large. Thus, soybean meal supplies for the year are projected at 26.2 million tons. Although lower prices will increase use, both domestic and export, higher consumption will not be enough to offset the increase in production. As a result, soybean meal prices, averaging $163 per ton in mid-September (44-percent protein, Decatur), are expected to range between $150 and $175 next year.

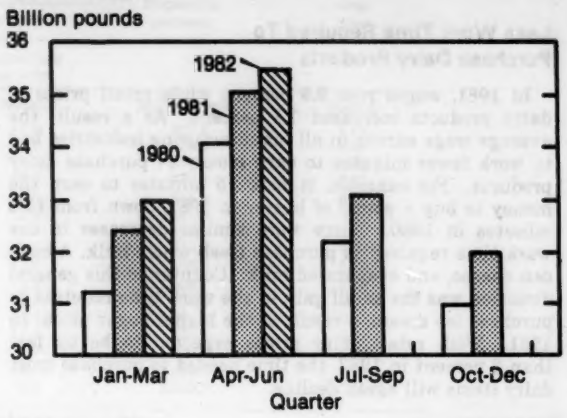
Delays in hay development and hay damage in some areas kept prices up last spring. However, the all-hay price had declined nationally to $65 per ton by August, only about $2 above a year earlier. The price of baled alfalfa averaged $70.40 per ton in August, down from this year's high of $85 in May. Between May and June, the alfalfa price dropped more than $7 per ton and then fell almost $5 from June to July.

The 1982/83 hay crop (May-April) is estimated to be a record 152 million tons, 6 percent above 1981/82. Added to the hay crop is a carryover of 25 million tons, for a total supply of 177 million—only 1 million below the record supply of 1979/80. Prices may be lower during the hay feeding season because of the large supply and smaller number of livestock. Additional downward pressure on hay prices comes from very good pasture and range conditions this fall—thus there was very little early feeding of the hay supplies. On August 1, pasture conditions were good to excellent, averaging 86 percent of normal, 4 points over a year ago. Conditions were still rated good to excellent on September 1 at 82 percent, except for Texas. However, recent rains have likely replenished moisture levels there.

Expansion Continues

Total milk production during January-June was 68.5 billion pounds—1.4 percent (1 billion pounds) greater than during the same period in 1981. The increased production was the result of about 1 percent more cows and a gain in output per cow of only 25 pounds—up less than 0.5 percent from first-half 1981. Second-quarter milk production was up 1.1 percent from a year earlier, compared with a gain of 1.8 percent posted in the first quarter. Available data for the third quarter, mostly Federal order receipts for July and August, imply that production will be up about 3 percent.

U.S. Milk Production by Quarters · 1980, 1981 & 1982



As in the first quarter, eight production regions reported gains in second-quarter milk production, led by the Mountain region with 6.8 percent, the Pacific with 2.8 percent, and the Southern Plains with 2.5 percent. The Northeast led the primary production areas with a gain of 1.4 percent, while the Lake States and Corn Belt were each up 0.2 percent. Declines again occurred in the Northern Plains (3.5 percent) and the Delta States (0.8 percent).

Data for the five leading milk-producing States indicate that four increased second-quarter output, led by Pennsylvania at 2.9 percent. California rose 2.6 percent and Minnesota 2.4 percent, while New York posted a slight gain of 0.5 percent. Wisconsin, on the other hand, was one of 16 States that exhibited no change or showed a decline; it was down 1.1 percent.

Second-quarter output per cow was up a very modest 7 pounds (0.2 percent) from a year earlier, compared with an increase of 69 pounds (2.2 percent) in the second quarter of 1981. It appears the modest quarterly gain probably reflects a decline in output per cow during April from a year earlier, but monthly "Milk Production" reports from the Crop Reporting Board are no longer available to substantiate this point. However, March and April-June dairy cow numbers, plus Federal order receipts, tend to support this assumption of lower April output per cow.

U.S. milk production[1]

Quarters	1980	1981	Year-to-year change	1982	Year-to-year change
	Million pounds		*Percent*	*Million pounds*	*Percent*
January-March	31,237	32,426	+3.8	33,005	+1.8
April-June	34,056	35,140	+3.2	35,512	+1.1
July-September	32,222	33,086	+2.7		
October-December	31,010	31,982	+3.1		
Total	128,525	132,634	+3.2		

[1]Excludes milk sucked by calves.

Utility cow prices, Omaha

Month	1979	1980	1981	1982
		Dollars per cwt		
January	47.33	47.94	41.61	36.64
February	50.81	51.22	43.65	38.11
March	52.94	48.80	43.12	39.41
April	57.00	45.73	43.95	41.26
May	55.51	42.78	42.39	43.40
June	50.60	44.06	42.88	42.73
July	47.80	43.33	43.78	42.52
August	48.33	45.53	44.31	42.25
September	49.65	46.56	42.47	
October	47.71	45.93	40.60	
November	46.49	43.91	38.71	
December	46.98	42.92	36.65	
Average	50.10	45.73	42.01	

The likely April drop was the result of the harsh weather at the end of the winter, the delayed spring, and the below-normal quality of hay. The output decline occurred despite a 1.2-percent expansion in grain and other concentrates being fed. However, since April, gains in output per cow have likely returned. Pasture conditions during May-September were excellent and additional grain was reported being fed on July 1—not surprising in view of the improvement in the milk-feed price ratio. Until next spring the ratio is expected to remain favorable to continued heavy concentrate feeding—despite a 50-cent-per-cwt deduction starting December 1. In addition, forage supplies will likely be large. Thus, gains in output per cow will probably occur, but some moderation may result if dairy farmers put a larger number of first-calf heifers into the milking herd.

Dairy farmers will face a dilemma this fall and early next year. Confronted with diminished profitability, due to lower effective returns per cwt after December 1, few may be willing and able to finance an expansion because of relatively high interest rates. On the other hand, diverting some of the heifers ready to enter the milking herd to the beef market would result in substantial losses. But, absorbing the large number of available heifers without expanding cow numbers would also result in substantial losses by necessitating fairly heavy culling of profitable older cows.

While the average number of milk cows during April-June, at 10,985,000, decreased 20,000 from the first-quarter average, another drop is not likely, given the level of replacements on July 1. Culling will have to be boosted significantly if January 1, 1983, cow numbers are to remain at the July 1, 1982, level. Apparent exits would have to equal 1.6 million head during July-December, considerably more than during the first half of 1982 or a year earlier. Of recent years, only 1977 showed an increase in the apparent exit rate during the second-half—and that was from a relatively low level.

Dairy farmers faced with reduced incentive because of the December 1 and April 1 deductions may cull enough to stop an expansion. However, substantially lower feed prices, slower increases in other cash costs, and moderate slaughter cow prices may hold the exit rate below the level needed to prevent increases in milk cow numbers. Another factor is that some dairy farmers may not react to the forthcoming deductions until after they begin to occur.

In summary, some additional gain in milk production seems probable during second-half 1982. Production for all 1982 is projected to be between 1.5 and 2 percent more than the record 132.6 billion pounds of last year.

Dairy farmers' reactions to the December 1 and authorized April 1 deductions will play a key role in determining 1983's milk production. The deductions add further uncertainty to other economic factors—low feed prices, large forage supplies, and unfavorable farm and non-farm alternatives. If farmers react quickly to the deductions, production for 1983 is likely to be about unchanged from this year. If, however, producers delay reacting until after next spring's flush production period, 1983 output will show a sizable increase from this year.

UTILIZATION

Manufactured Dairy Products Larger

Milk used to manufacture dairy products during April-June was 21.4 billion pounds, a gain of about 400 million pounds (1.8 percent) from second-quarter 1981 (table 8). On a milk-equivalent, fat-solids-basis, other-than-American-type cheese accounted for half of the gain in raw milk use, while ice cream used about one-fourth

Table 7—Wisconsin out-of-state milk shipments

Month	1980		1981		1982[1]	
	Loads	Volume	Loads	Volume	Loads	Volume
	Number	*Thousand pounds*	*Number*	*Thousand pounds*	*Number*	*Thousand pounds*
January	156	7,332	4	188	57	2,679
February	70	3,290	7	329	31	1,457
March	20	940	2	94	20	940
April	0	0	0	0	7	329
May	0	0	0	0	15	705
June	0	0	0	0	22	1,034
July	119	5,593	48	2,256	25	1,175
August	146	6,862	41	1,927	23	1,081
September	190	8,930	118	5,546		
October	67	3,149	25	1,175		
November	8	376	40	1,880		
December	6	282	23	1,081		
Total	782	36,754	308	14,476		

[1]Changes in marketing practices in the Chicago market and adjacent Federal order markets may affect the comparability of this data.

Table 8—Production of selected manufactured dairy products

Item	Year 1981	Change from 1980	Jan.-March 1982[1]	Change from 1981	April-June 1982[1]	Change from 1981
	Million pounds	*Percent*	*Million pounds*	*Percent*	*Million pounds*	*Percent*
Butter	1,228.2	+7.2	368.6	+6.2	332.9	+1.3
American cheese	2,608.5	+9.8	655.6	+2.7	740.9	+0.1
Other cheese	1,620.6	+0.7	393.6	+2.3	437.8	+6.6
Cottage cheese[2]	981.7	−2.3	233.5	−4.8	258.2	−0.9
Canned milk	757.9	+4.6	173.3	+2.2	195.0	−2.6
Dry whole milk	92.7	+12.1	26.6	+30.0	29.2	+29.0
Ice cream	3,994.8	+0.3	892.8	+2.5	1,123.5	+4.0
Milk equivalent[3]	77,862.0	+5.1	19,414.0	+3.0	21,419.0	+1.8
Nonfat dry milk	1,314.3	+13.2	336.6	+10.6	417.2	+6.2

[1]Preliminary. [2]Creamed and low-fat. [3]Total reported manufactured products.

and butter and dry whole milk together used the last fourth. With second-quarter American cheese production up only slightly from April-June 1981, milk used in its production was nearly unchanged, while less milk was canned or converted into cottage cheese.

Second-quarter butter output totaled nearly 333 million pounds, a gain of only 1.3 percent. Meanwhile, total cheese output during the second quarter was higher than April-June 1981, with all of the gain in the other cheese item which was up 6.6 percent.

January-June sales

Item	1981	1982	Change
	Million pounds		
Total milk[1]	58,028.0	59,329.0	+2.2
Manufactured products:			
American cheese	1,030.6	1,056.2	+2.5
Other cheese	884.5	919.2	+3.9
Cottage cheese[2]	506.0	491.7	−2.8
Butter	403.2	429.3	+6.5
Ice cream	1,951.7	2,016.3	+3.3
Ice milk	809.2	786.2	−2.8
Canned milk	337.1	319.6	−5.2
Nonfat dry milk	190.8	169.6	−11.1
Fluid products[3]			
Whole milk	8,100.0	7,866.0	−3.1
Skim and lowfat milk	6,442.0	6,471.0	+0.2

[1]On a milk-equivalent, fat-solids-basis. [2]Creamed and low-fat. [3]Based on January-May Federal order data, percent change adjusted for calendar composition and seasonality.

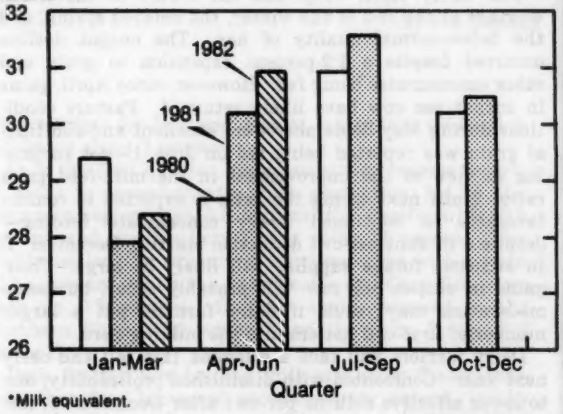
Commercial Use Still Strong

Data for April-June indicate that on a milk-equivalent, fat-solids-basis, commercial disappearance was up 2.4 percent from a year before (table 9). Disappearance for January-June was up 2.2 percent—1.3 billion pounds.

Commercial disappearance includes civilian and military purchases of milk and dairy products for domestic and foreign use, but excludes farm household use and USDA donations of butter, cheese, and nonfat dry milk. Disappearance is a residual figure and therefore can be affected by any inaccuracies in estimating milk production, on-farm use, stocks, and imports.

Butter commercial disappearance during the second quarter was up less than 1 percent from a year earlier, but use was about 13 percent larger in the first quarter

Commercial Disappearance of Milk in All Products*



*Milk equivalent.

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(table 10). For January-June, butter sales were up 6.5 percent.

American cheese disappearance was higher in both the first and second quarters than in 1981. Thus first-half American-type use was up 2.5 percent. Other cheese sales also improved in both quarters, rising nearly 4 percent for the first half. Meanwhile, fluid sales of whole milk for the first 7 months were down about 3 percent, while skim and lowfat milk sales were up about 0.5 percent.

Commercial use of milk and dairy products during the third quarter is not expected to expand much from a year earlier because consumer income is still weak and also because sales were strong a year ago. However, in the fourth quarter and the first half of next year, sales are expected to be up 1 to 2 percent due to the July 1 tax cut and expected modest economic recovery, and because of the growth in population.

American-type Cheese Consumption Higher in 1981

Per capita consumption of cheese and related processed products rose substantially in 1981. Natural cheese consumption has trended steadily upward since 1970, and the processed market has also increased, although at a slower rate (table 13). Natural cheese consumption rose 0.8 pound in 1981, an increase of 7 percent. Consump-

Table 9—Commercial disappearance: Total milk, annual and quarters, 1980-82[1]

Item	1980				1981					1982[2]	
	Quarters			Year	Quarter				Year	Quarters	
	II	III	IV		I	II	III	IV		I	II
					Billion pounds						
Production	34.1	32.2	31.0	128.5	32.4	35.1	33.1	32.0	132.6	33.0	35.5
Farm use	.6	.6	.6	2.3	.6	.6	.6	.6	2.3	.6	.6
Marketings	33.5	31.6	30.4	126.2	31.9	34.6	32.5	31.4	130.3	32.4	34.9
Beginning Commercial stocks	5.6	6.3	6.1	5.4	5.8	5.8	5.9	5.3	5.8	5.4	5.2
Imports	.4	.5	.9	2.1	.4	.6	.6	.9	2.3	.4	.7
Total supply	39.5	38.4	37.4	133.7	38.1	40.9	39.0	37.5	138.4	38.3	40.8
Ending Commercial stocks	6.3	6.1	5.8	5.8	5.9	5.9	5.3	5.4	5.4	5.2	4.9
Net Removals Commercial	4.4	1.5	1.4	8.8	4.3	4.8	2.1	1.6	12.9	4.7	4.9
Disappearance (actual)	28.7	30.9	30.2	119.2	27.9	30.2	31.6	30.5	120.1	28.4	30.9
Percent change[3]	−4.8	+0.2	−0.6	−0.9	[4]−5.1	+5.0	+2.5	+0.9	+0.8	+2.0	+2.4

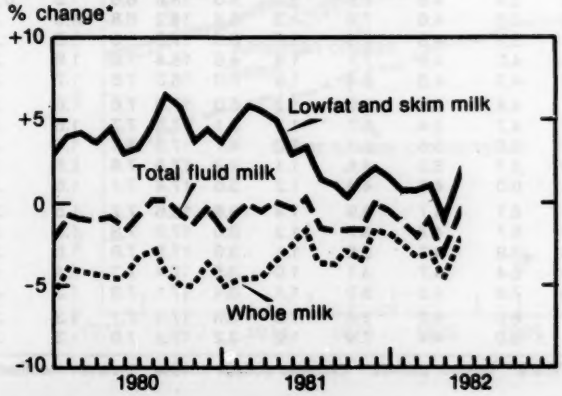
[1]Milk equivalent, fat-solids basis. Totals may not add due to rounding. [2]Preliminary. [3]From year earlier, using unrounded data. [4]On a daily average basis.

Table 10—Commercial disappearance: Selected dairy products, 1972-82[1]

Year	Butter[2]	Cheese		Nonfat dry milk	Canned milk	Frozen products[4]
		American[3]	Other			
		Million pounds				*Million gallons*
1972	885.4	1,595.7	1,127.8	919.2	1,102.6	1,108.6
1973	855.6	1,677.1	1,210.2	1,110.1	1,056.7	1,118.6
1974	929.9	1,780.6	1,276.5	809.9	999.4	1,128.0
1975	951.0	1,717.1	1,331.9	697.0	924.0	1,183.9
1976	919.0	1,920.9	1,458.0	719.2	898.9	1,154.0
1977	859.8	1,958.8	1,512.3	682.2	775.4	1,167.6
1978	903.5	2,064.7	1,655.5	658.4	776.0	1,173.5
1979	895.0	2,113.1	1,730.4	603.0	773.6	1,152.1
1980	878.8	2,023.9	1,827.9	538.8	732.6	1,168.4
1981-1st. Qtr.	188.9	521.7	438.4	104.6	177.9	249.8
2nd. Qtr.	214.3	508.9	446.1	86.2	159.2	326.7
3rd. Qtr.	222.9	536.5	457.4	155.4	167.1	348.0
4th. Qtr.	243.2	548.4	528.6	118.0	246.0	244.8
Total	869.2	2,115.5	1,870.8	464.1	750.4	1,169.4
1982-1st Qtr.[5]	213.4	534.7	444.8	94.4	170.1	251.1
2nd Qtr.[5]	215.9	521.5	474.4	75.2	149.5	334.7

[1]Total may not add due to rounding. [2]Imports include butter equivalent of butteroil. [3]Imports include colby cheese; stocks do not include processed cheese. [4]Excludes Mellorine. [5]Preliminary.

Daily Average Sales of Fluid Milk Items



*From year earlier. Adjusted for calendar composition.

USDA Neg. ERS 2705-82(9)

Table 11—Milk: Supply and utilization in all dairy products, United States, 1965-81[1]

Year	Supply					Utilization						
	Production	Imports	Beginning stocks		Total	Total use	Exports and shipments		Domestic disappearance			
			Commercial	Government			Commercial[2]	USDA[3]	Fed to calves	Food use		
										Military	Civilian consumption	
											Total	Per capita
	Million pounds											*Pounds*
1965	124,180	923	4,317	973	130,393	125,937	1,710	648	2,061	2,819	118,699	620
1966	119,912	2,791	3,918	538	127,159	122,300	907	301	1,980	2,376	116,736	604
1967	118,732	2,908	4,813	46	126,499	118,247	593	231	1,891	2,117	113,415	581
1968	117,225	1,780	4,258	3,994	127,257	120,550	814	957	1,821	3,295	113,663	577
1969	116,108	1,621	3,983	2,724	124,436	119,191	942	477	1,745	2,696	113,232	569
1970	117,007	1,874	3,798	1,447	124,126	118,323	949	41	1,702	2,419	113,212	461
1971	118,566	1,346	3,705	2,098	125,715	120,611	1,063	1,963	1,635	2,031	113,919	556
1972	120,025	1,694	3,565	1,539	126,823	121,325	1,263	884	1,624	1,671	115,883	558
1973	115,491	3,860	3,493	2,005	124,849	119,641	1,213	79	1,584	1,257	115,508	551
1974	115,586	2,923	4,732	476	123,717	117,831	1,133	25	1,558	1,137	113,978	539
1975	115,398	1,669	5,576	310	112,953	119,110	1,026	20	1,566	1,075	115,423	540
1976	120,180	1,943	3,719	124	125,966	120,257	1,004	23	1,567	1,013	116,650	540
1977	122,654	1,968	5,292	410	130,331	121,705	963	29	1,541	996	118,176	542
1978	121,461	2,310	4,916	3,710	132,297	123,668	927	51	1,497	977	120,216	545
1979	123,411	2,305	4,475	4,254	134,445	125,768	982	38	1,437	1,163	122,226	548
1980	128,525	2,109	5,419	3,258	139,311	126,252	1,932	56	1,395	1,067	122,803	544
1981[4]	132,634	2,329	5,752	7,307	148,022	129,484	3,683	67	1,420	1,020	123,294	541

[1]Milk equivalent, fat-solids basis. [2]Includes sales for dollars and government-to-government sales. [3]Includes P.L. 480 and AID programs. [4]Preliminary

Table 12—Dairy products: Per capita civilian consumption, United States, 1965-81[1]

Year	Fluid milk & cream[2]		Butter	Cheese			Evaporated and condensed			Frozen products					Dry milk products			
	Sales of fluid products	Total		Whole and part skim milk[3]		Cottage cheese	Canned whole milk	Bulk condensed, whole milk	Skim and buttermilk	Ice cream	Ice milk	Sherbet	Other frozen dairy products	Margarine	Dry whole milk	Nonfat dry milk	Dry buttermilk	Dry whey[4]
				American	Other													
	Pounds																	
1965	272	290	6.4	6.2	3.4	4.6	8.6	2.1	5.0	18.5	6.6	1.5	0.2	1.3	0.3	5.6	0.4	0.6
1966	272	289	5.7	6.2	3.6	4.6	7.9	1.9	5.4	18.2	6.8	1.6	.2	1.3	.3	5.9	.3	.7
1967	265	280	5.5	6.4	3.7	4.5	7.3	1.7	5.0	17.8	7.0	1.5	.2	1.3	.3	5.6	.3	.9
1968	266	280	5.7	6.6	4.0	4.6	7.1	1.8	4.8	18.4	7.2	1.6	.2	1.4	.2	5.8	.3	1.1
1969	265	277	5.4	6.7	4.2	4.8	6.4	1.5	5.0	18.0	7.6	1.7	.2	1.3	.2	5.8	.3	1.2
1970	264	275	5.3	7.1	4.4	5.2	5.9	1.2	5.0	17.6	7.8	1.6	.2	1.2	.2	5.3	.2	1.5
1971	262	273	5.1	7.4	4.7	5.4	5.7	1.1	5.1	17.5	7.7	1.6	.2	1.1	.2	5.3	.3	1.6
1972	265	274	4.9	7.8	5.3	5.5	5.1	1.2	4.7	17.3	7.7	1.6	.3	1.1	.1	4.6	.2	1.8
1973	262	270	4.8	7.9	5.7	5.3	4.8	1.1	4.3	17.3	7.6	1.6	.3	.9	.1	5.3	.2	1.8
1974	254	261	4.5	8.6	6.0	4.7	4.4	1.2	3.5	17.4	7.7	1.5	.3	.8	.1	4.2	.2	2.2
1975	259	266	4.7	8.2	6.1	4.7	3.9	1.4	3.6	18.5	7.7	1.5	.3	.7	.1	3.3	.2	2.2
1976	252	263	4.3	9.0	6.7	4.7	3.7	1.3	3.6	17.9	7.3	1.5	.3	.5	.2	3.5	.2	2.4
1977	253	259	4.3	9.3	6.8	4.7	3.2	1.1	3.9	17.5	7.8	1.5	.3	.4	.2	3.3	.3	2.4
1978	251	256	4.4	9.6	7.4	4.7	3.1	1.0	3.5	17.4	7.7	1.4	.4	.4	.2	3.1	.2	2.5
1979	248	252	4.5	9.6	7.6	4.5	3.0	1.1	3.4	17.1	7.3	1.3	.3	.3	.3	3.3	.2	2.7
1980	245	249	4.5	9.7	8.0	4.6	2.8	1.0	3.3	17.3	7.1	1.3	.3	.3	.3	3.0	.2	2.7
1981[5]	241	245	4.3	10.1	8.0	4.4	2.9	1.2	3.2	17.2	7.0	1.3	.4	.2	.3	2.7	.2	2.7

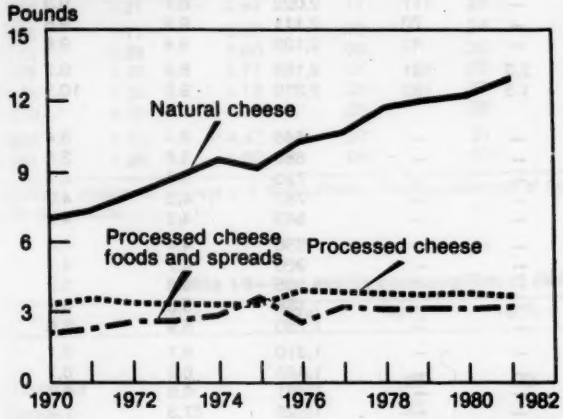
[1]See table 15, DS-332, for earlier years. [2]Product pounds. [3]Excludes cottage cheese. [4]Includes modified dry whey products beginning 1975. [5]Preliminary.

Table 13—Per capita civilian consumption of processed and natural cheese, 1972-81

Year	Processed	Processed foods and spreads[1]	Total processed and products[2]	Natural[3]	Total natural equivalent
			Pounds		
1972	3.4	2.7	6.0	8.2	13.1
1973	3.3	2.7	6.0	8.9	13.8
1974	3.4	2.9	6.4	9.5	14.5
1975	3.3	3.4	6.7	9.2	14.4
1976	3.8	2.6	6.5	10.5	15.8
1977[4]	3.8	3.3	7.1	10.6	16.1
1978[4]	3.7	3.3	7.0	11.5	16.9
1979[4]	3.7	3.1	6.8	11.9	17.2
1980[4]	3.8	3.1	7.0	12.2	17.6
1981[5]	3.6	3.2	6.7	13.0	18.2

[1]Includes cold pack; excludes spreads from Neufchatel and cream cheese. [2]May not add due to rounding. [3]Consumed in this form. [4]Revised. [5]Preliminary.

Per Capita Consumption of Processed and Natural Cheese



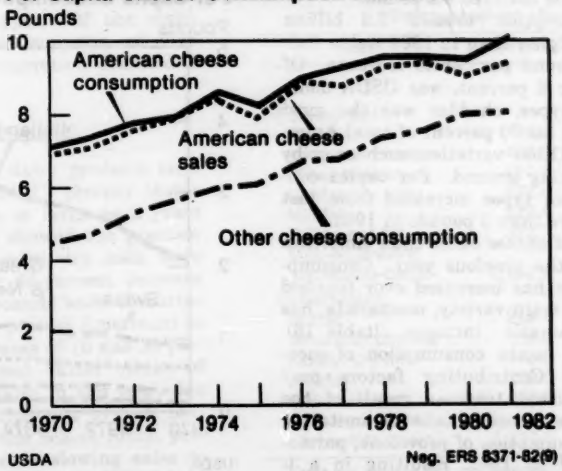
USDA Neg. ERS 8373-82(9)

Per capita civilian consumption of cheddar and other American cheese, 1972-81

Year	Cheddar	Other American[1]	Total American types[2]
		Pounds	
1972	6.1	1.7	7.8
1973	6.2	1.8	7.9
1974	6.4	2.2	8.6
1975	6.1	2.1	8.2
1976	6.5	2.5	9.0
1977	6.8	2.4	9.3
1978	7.0	2.6	9.6
1979	7.0	2.6	9.6
1980	6.9	2.8	9.7
1981	7.0	3.1	10.1

[1]Colby, washed or stirred curd, high and low moisture jack, Monterey, and granular. [2]May not add due to rounding.

Per Capita Cheese Consumption and Sales



USDA Neg. ERS 8371-82(9)

Table 14—Sales and civilian consumption of American and other cheese, 1965-81

Year and cheese	Sales[1]			USDA donations			Civilian consumption	Per capita	
	Civilian	Military	Total	Civilian	Military	Total		Sales	Civilian consumption
	Million pounds							*Pounds*	
American cheese									
1965	1,098	8	1,106	80	3	83	1,178	5.7	6.2
1966	1,195	11	1,206	5	–	5	1,200	6.2	6.2
1967	1,168	14	1,182	81	–	81	1,249	6.0	6.4
1968	1,191	13	1,204	105	4	109	1,296	6.0	6.6
1969	1,249	10	1,259	90	1	91	1,339	6.3	6.7
1970	1,385	8	1,393	46	–	46	1,431	6.8	7.1
1971	1,445	7	1,452	75	–	75	1,520	7.0	7.4
1972	1,568	5	1,573	46	–	46	1,614	7.5	7.8
1973	1,657	4	1,661	4	–	4	1,661	7.9	7.9
1974	1,768	3	1,771	43	–	43	1,811	8.3	8.6
1975	1,689	3	1,692	73	–	73	1,762	7.9	8.2
1976	1,908	4	1,912	25	–	25	1,933	8.8	9.0
1977	1,905	7	1,912	117	–	117	2,022	8.7	9.3
1978	2,041	9	2,050	70	–	70	2,111	9.2	9.6
1979	2,097	21	2,118	42	–	42	2,139	9.4	9.6
1980	2,002	14	2,016	179	2.3	181	2,183	8.9	9.7
1981[2]	2,158	10	2,168	151	1.3	152	2,310	9.5	10.1
Other cheese									
1965	648	5	653	–	–	–	648	3.4	3.4
1966	689	7	696	–	–	–	689	3.6	3.6
1967	720	8	728	–	–	–	720	3.7	3.7
1968	787	7	794	–	–	–	787	4.0	4.0
1969	843	6	849	–	–	–	843	4.2	4.2
1970	886	6	892	–	–	–	886	4.4	4.4
1971	966	5	971	–	–	–	966	4.7	4.7
1972	1,105	5	1,110	–	–	–	1,105	5.3	5.3
1973	1,188	5	1,193	–	–	–	1,188	5.6	5.7
1974	1,260	7	1,267	–	–	–	1,260	5.9	6.0
1975	1,310	7	1,317	–	–	–	1,310	6.1	6.1
1976	1,443	3	1,446	–	–	–	1,443	6.6	6.7
1977	1,491	2	1,493	–	–	–	1,491	6.8	6.8
1978	1,625	2	1,627	–	–	–	1,625	7.3	7.4
1979	1,699	3	1,702	–	–	–	1,699	7.6	7.6
1980	1,793	2	1,795	–	–	–	1,793	7.9	7.9
1981[2]	1,824	2	1,826	–	–	–	1,824	8.0	8.0

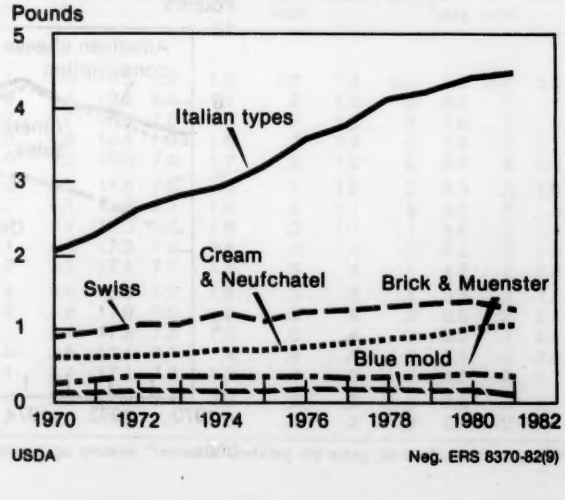
[1]Domestic disappearance, commercial sources. [2]Preliminary.

tion of processed cheese foods and spreads increased 0.1 pound, while processed cheese declined 0.2 pound.

American cheese consumption totaled 2.3 billion pounds in 1981, 6 percent higher than in 1980 (table 14). This amounted to a half-pound per capita increase. Of this, 152 million pounds, or 6 percent, was USDA donations. Of the American types, cheddar was the most popular variety, accounting for 70 percent of total American cheese consumption. Other varieties, such as colby and jack cheeses, are gaining ground. Per capita consumption of other American types increased from just over 1 pound in 1970 to more than 3 pounds in 1981.

Per capita consumption of cheese other than American improved 0.1 pound from the previous year. Consumption of Italian-type cheeses has increased over fourfold since 1960 (table 15). The main variety, mozzarella, has exhibited the most dramatic increase (table 16). Nevertheless, in 1981 per capita consumption of mozzarella dropped slightly. Contributing factors may include 1981's poor restaurant trade—a result of the sluggish economy—and the inroads made by imitation mozzarella. Per capita consumption of provolone, parmesan, and ricotta increased in 1981, resulting in a l-

Per Capita Consumption of Other Cheese



USDA

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Table 15—Per capita consumption of selected cheese varieties, 1960-81

	Swiss[1]	Italian types[2]	Brick	Muenster	Cream and Neufchatel	Blue[3]	Edam and Gouda	Limburger	Roquefort
					Pounds				
1960	.76	1.00	.15	.13	.60	.11	.06	.02	.01
1961	.73	1.02	.13	.13	.60	.11	.07	.02	.01
1962	.74	1.08	.13	.13	.66	.10	.07	.02	.01
1963	.72	1.18	.13	.13	.62	.10	.07	.02	.01
1964	.74	1.30	.12	.15	.63	.11	.07	.02	.01
1965	.73	1.40	.12	.16	.64	.12	.07	.02	.01
1966	.80	1.53	.12	.15	.60	.13	.10	.02	.01
1967	.81	1.59	.11	.15	.62	.12	.10	.01	.01
1968	.93	1.74	.11	.15	.60	.12	.15	.01	.01
1969	.85	1.97	.10	.16	.62	.13	.10	.01	.01
1970	.90	2.09	.10	.17	.63	.14	.11	.01	.01
1971	.95	2.31	.11	.19	.64	.15	.10	.01	.01
1972	1.08	2.63	.11	.22	.65	.16	.11	.01	.01
1973	1.08	2.84	.11	.22	.67	.17	.12	.01	.01
1974	1.21	2.99	.11	.23	.72	.16	.11	.01	.01
1975	1.11	3.27	.09	.24	.75	.15	.11	.01	.01
1976	1.26	3.60	.09	.26	.78	.18	.11	.01	.01
1977	1.22	3.77	.07	.25	.81	.17	.11	.01	.01
1978	1.35	4.12	.08	.27	.90	.19	.12	.01	.01
1979	1.36	4.28	.06	.29	.95	.17	.13	.01	.01
1980	1.34	4.47	.07	.31	1.01	.17	.13	.01	.01
1981	1.28	4.50	.06	.30	1.06	.16	.12	.01	.01

[1]Includes imports of Gruyere and Emmenthaler. [2]Includes imports of Romano, Pecorino, Reggiano, Parmesano, Provolone, and Provelette. [3]Includes Gorgonzola.

Table 16—Per capita consumption of Italian-type cheese, by variety, 1973-81

Variety	1973	1974	1975	1976	1977	1978	1979	1980	1981
					Pounds				
Provolone	.27	.28	.28	.32	.35	.37	.41	.42	.45
Romano	.16	.15	.23	.17	.16	.19	.16	.15	.14
Parmesan	.19	.25	.17	.28	.27	.28	.32	.28	.31
Mozzarella	1.79	1.88	2.14	2.34	2.49	2.72	2.84	3.05	3.01
Ricotta	.34	.34	.38	.41	.41	.45	.47	.47	.50
Other	.09	.09	.07	.08	.09	.11	.08	.10	.09

percent increase in total Italian-types. Of the eight non-American types, per capita consumption of five declined in 1981; Swiss cheese consumption declined 5 percent.

Government Stocks Continue To Expand

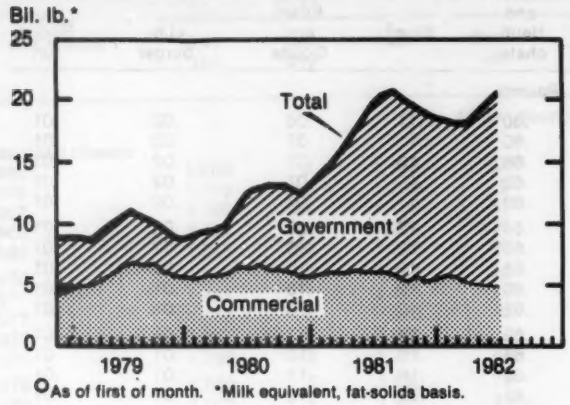
On July 1, Government stocks of dairy products on a milk-equivalent, fat-solids-basis were 17 percent larger than a year earlier and over twice as large as 2 years earlier. Stocks of nonfat dry milk showed the greatest increase. One billion pounds of nonfat dry milk were being stored by CCC on July 1, a 63-percent increase from July 1981. The half-billion pounds each of butter and American cheese (not including process American) in Government storage represent increases of 10 and 33 percent, respectively. Government-owned butter stocks of 514.6 million pounds may decline later in the year, due to domestic donations, additional shipments to New Zealand from last year's sale, use in the school lunch program, and the possibility of the trade slowing sales to USDA in order to replenish its own stocks. USDA-held

Dairy product stocks, July 1

Item	1980	1981	1982
		Million pounds	
Commercial:			
Butter	46.5	40.9	25.7
American cheese	433.3	425.4	371.6
Other cheese	110.6	100.8	95.8
Nonfat dry milk	137.4	116.3	127.5
Milkfat	222.4	208.4	180.0
Solids-not-fat	322.7	288.1	287.3
Milk-equivalent, fat-solids-basis	6,282.8	5,921.0	4,939.3
Government:			
Butter	249.4	466.6	514.6
American cheese[1]	59.2	402.5	536.7
Nonfat dry milk	411.0	616.8	1,004.9
Milkfat	219.8	505.2	587.0
Solids-not-fat	413.7	717.5	1,147.1
Milk-equivalent, fat-solids-basis[1]	5,737.2	13,612.6	15,932.2

[1]Does not include process American cheese stocks held by CCC.

Dairy Product Stocks:[O] Milk Equivalent Fat Solids Basis, Beginning Jan. 1



[O]As of first of month. *Milk equivalent, fat-solids basis.

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quantities of American cheese will probably continue to grow throughout 1982, as purchases are likely to be higher than use. CCC stocks of process American are expected to decline from July 1 levels because of the cheese giveaway and the school lunch program.

Commercial stocks of dairy products on July 1 totaled 4.9 billion pounds (milk-equivalent, fat-solids-basis), down from 5.9 billion a year earlier. Butter held in commercial storage dropped almost 60 percent from July 1, 1981, to July 1, 1982. All cheese held by the trade declined 13 percent over the same period. Commercial stocks of nonfat dry milk increased 10 percent, although the increase (11 million pounds) was small compared with the increase in Government stocks (388 million pounds).

Government stocks of dairy products are likely to increase as CCC purchases are expected to exceed distributions. With relatively high interest rates, the cushion of large Government stocks, and the ability to meet current needs from current output, stocks held by the commercial trade are not expected to increase significantly.

CCC Purchases Larger

Net purchases (delivery basis) by the CCC during January-August totaled 11.5 billion pounds (milk equivalent), 6.5 percent above the record purchases over the same period in 1981. For the 1981/82 marketing year (October-September), net removals are projected to be 13.7 billion pounds.

Purchases of butter in the first 8 months of 1982 were up almost 9 percent. Purchases dropped during June through August as butter production declined seasonally. From a high of 56.7 million pounds purchased in February, purchases declined to 12.6 million in August. CCC net removals of 380 million pounds are projected for the October 1981-September 1982 marketing year, up 7 percent from the previous year.

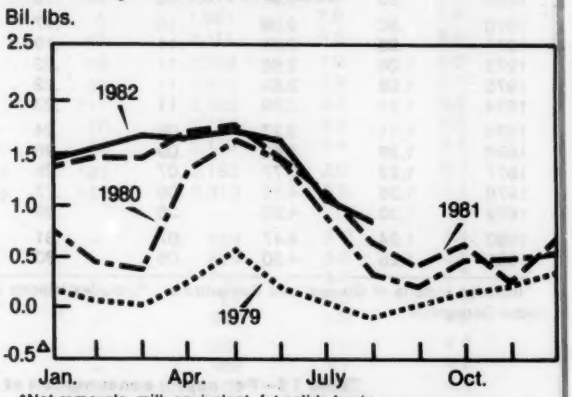
American cheese purchased by CCC totaled 476 million pounds during January-August. Net purchases peaked in June at 80.2 million pounds but declined to 59.2 million in August. With 40 million forecast to be purchased in September, net removals of cheese for 1981/82 would be 590 million pounds.

USDA dairy purchases[1]

Item	January-August		
	1981	1982	Change
	Million pounds		*Percent*
Butter	300.2	326.8	+8.9
American cheese	461.2	475.9	+3.2
Nonfat dry milk	622.7	715.2	+14.9
Evaporated milk	13.0	13.2	+1.5
Milk-equivalent, fat-solids-basis	10,782.9	11,479.1	+6.5

[1]Deliveries minus unrestricted sales.

USDA Dairy Product Purchases*



*Net removals, milk equivalent, fat-solids basis.
△Negative figures denote domestic sales exceeded purchases.

USDA Neg. ERS 8449-82(9)

Nonfat dry milk purchases during January through August were up 15 percent over last year, at 715 million pounds. For the marketing year, net removals may be over 20 percent higher than in 1980/81.

Government purchases will probably increase seasonally in the fourth quarter over the low summer purchases, so uncommitted CCC inventories are likely to continue to increase. Uncommitted CCC inventories as of September 1 were substantially higher than last year. Nonfat dry milk uncommitted holdings were up over 38 percent, while uncommitted holdings of American cheese and butter were up 50 percent and 93 percent, respectively.

FOREIGN TRADE AND TRENDS

Imports Up Sharply

Imports of dairy products in the first half of 1982, on a milk-equivalent, fat-solids-basis, were up 24 percent over

Uncommitted CCC stocks, September 1

Item	1981	1982
	Million pounds	
Butter	215.2	416.3
American cheese	544.3	821.4
Nonfat dry milk	777.1	1,187.5

U.S. dairy trade
(milk-equivalent, fat-solids-basis)

Year and quarters	Imports		Exports	Shipments[1]
	Cheese	Other		
	Million pounds			
1980				
1st	224	142	108	135
2nd	321	35	88	139
3rd	489	18	75	142
4th	832	46	99	146
Year[2]	1,866	241	370	562
1981				
1st	306	97	85	162
2nd	393	75	428	138
3rd	451	125	806	155
4th	809	67	1,777	131
Year[2]	1,960	365	3,096	586
1982				
1st	359	62	1,558	153
2nd	439	219	938	157

[1]To U.S. territories. [2]May not add due to rounding.

last year, with cheese imports up 14 percent, while other products increased nearly two-thirds. However, during July milk equivalent imports declined 29 percent—cheese was about unchanged while other products fell more than 70 percent (table 17). Therefore, January-July imports on a milk equivalent basis were up 12 percent from a year earlier.

During the first 7 months of 1982 quota-type cheese imports (product-weight-basis) increased 17 percent, while nonquota types stayed approximately the same. Of the quota cheese, American-type imports were up about 9 percent compared with last year. Imports of Italian cheese (original loaves) and the Swiss-type emmenthaler were up 51 and 5 percent, respectively, while 'other' quota types (greater than 5 percent fat) increased by 44 percent.

Casein imports during January-July were up 21 percent from the low 1981 level, but still below 1980. Lactose imports were down 47 percent in the first 7 months of 1982 from the same period last year.

World Dairy Production Outlook

Initial forecasts of 1983 world dairy production indicate that milk production is likely to be about 1 percent higher than 1982. Most of the increase will come from the two largest dairy producers, the European Community and the USSR. Milk production in Canada may decline 2 percent in 1983, while Australia, New Zealand, and Japan are expected to maintain production close to 1982. As world demand for fresh milk and cheese is limited, production of butter and nonfat dry milk is expected to increase.

Earnings

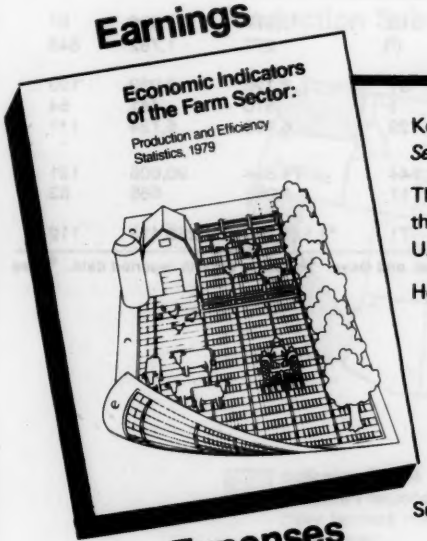


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Table 17—Dairy products: U.S. imports, quota and non-quota, total 1981 and January-July, 1981-82[1]

Product	Calendar year quota	1981 Imports	July			Cumulative, January-July		
			1981	1982	1982 as a % of 1981	1981	1982	1982 as a % of 1981
		Thousand pounds			*Percent*	*Thousand pounds*		*Percent*
Cheese, quota types								
American-cheddar	12,205.3	12,099	812	1,822	224	6,160	6,446	105
-other	7,545.4	[4]7,842	264	780	295	1,502	1,876	125
Italian-original loaves	12,374.4	7,840	460	556	121	3,406	5,137	151
-Other	1,550.0	619	6	211	([5])	301	860	286
Edam and Gouda-natural	9,206.6	9,029	1,150	510	44	5,634	5,137	91
-processed	3,151.3	3,068	320	438	137	1,204	1,162	97
Blue mold	5,469.6	5,095	379	441	116	2,264	2,408	106
Swiss-Emmenthaler	70,278.1	66,116	6,444	4,649	72	33,543	35,378	105
-Gruyere process	16,479.0	13,300	1,143	1,236	108	5,992	5,794	97
Other-over 0.5% fat	89,466.8	77,337	4,009	4,860	121	22,770	31,457	138
-under 0.5% fat	12,621.1	10,110	1,502	762	51	4,975	7,167	144
Total	240,349.6	212,475	16,490	16,265	99	87,752	102,823	117
Cheese, nonquota types								
Other cow's milk cheeses[2]		12,463	742	992	134	6,203	6,984	113
Miscellaneous[3]		894	83	28	34	529	576	109
Pecorino		20,615	1,180	888	75	10,765	10,119	94
Roquefort		1,214	141	33	23	717	455	63
Total		35,187	2,146	1,942	90	18,215	18,133	100
Total cheese, quota and nonquota	240,349.6	247,661	18,636	18,207	98	105,967	120,957	114
Other quota products								
Butter	707.0	[4]1,827	111	15	14	[4]921	[4]919	100
Butteroil	1,200.0	1,200	—	—	—	1,200	1,200	100
Butterfat mixtures	2,580.0	1,204	—	3	[5]	1,204	90	7
Ice cream	3,377.3	0	—	—	—	—	—	—
Frozen cream	12,540.0	12,413	1,007	225	22	8,300	8,871	107
Nonfat dry milk	1,807.0	[4]2,751	121	112	93	1,834	1,015	55
Dried buttermilk and whey	496.0	383	66	—	([5])	255	9	4
Evaporated milk	1,312.0	[4]4,954	389	448	115	[4]2,877	[4]2,596	97
Condensed milk	4,079.0	386	48	—	([5])	277	1,782	643
Chocolate crumb-regular	21,409.2	11,691	1,705	876	51	7,326	9,032	123
-lowfat	4,680.0	1,026	83	1	1	810	441	54
Animal feed with milk solids	16,300.0	15,622	2,573	3,327	129	5,153	5,724	111
Non-quota products								
Casein		127,823	9,997	14,381	144	74,894	90,605	121
Lactose		2,381	277	47	17	1,081	568	53
Milk equivalent, fat solids basis, total all proucts	2,234,270	[4]2,329,206	250,883	178,367	71	[4]1,125,273	[4]1,258,413	112

[1]Preliminary. [2]Primarily soft, ripened cheeses. [3]Gjetost, Bryndza, Gammelost and Noekkelost, and Goya. [4]Probable error in reported data. [5]More than 1,000. [6]Less than 1.

NATIONAL AND REGIONAL COSTS AND RETURNS OF PRODUCING MILK

By Richard F. Fallert [1]

ABSTRACT: Direct costs plus ownership costs for the dairy enterprise averaged $13 per cwt of milk in the United States in 1981, compared with $12.20 in 1980 and $10.61 in 1979. After accounting for direct (cash) costs of $9.28 in 1981, dairy farmers received a return of $5.69 a cwt. This compared with returns of $5.50 in 1980 and $5.63 in 1979. Total returns to operator and family labor and management averaged $1.97 per cwt of milk in 1981, compared with $2.13 in 1980 and $2.81 in 1979.

KEYWORDS :Dairy enterprise, costs and returns.

The Agriculture and Consumer Protection Act of 1973 directed the Secretary of Agriculture to estimate the annual costs of producing certain major agricultural commodities, including milk. To implement the legislation, a program of research is carried out by the Economic Research Service, USDA, and results are published by the Congress. Data in this article were recently published in the sixth report on the cost of producing milk. [2] The purpose of this article is to present the highlights of the published report. The cost and return estimates are based primarily on a survey made in early 1980 of 2,095 dairy farmers in 19 individual States plus the New England region (figure 1). Milk production in the sampled areas represents 85 percent of total U.S. milk production.

National Revenues and Costs

Direct costs plus ownership costs for the dairy enterprise averaged $13 per cwt of milk in the United States in 1981, compared with $12.20 in 1980 and $10.61 in 1979 (table 1). Direct costs alone were $9.28 per cwt in 1981, up from $8.83 in 1980 and $7.79 in 1979. Ownership costs were $3.72 per cwt in 1981, a rise of 35 cents (10.4 percent), following a rise of 55 cents (19.5 percent) in 1980. Feed costs, the largest component of costs, were $6.36 per cwt in 1981, an increase of 4 percent from 1980 and 18 percent from 1979.

During 1979-81, about 28 percent of total direct and ownership costs were ownership costs, which in turn were about 52 percent livestock costs. However, care should be used on the interpretation of ownership costs.

Figure 1

Production Subregions for Milk Cost Analysis

[1]Section leader, Dairy Research Section, National Economics Division, Economic Research Service, USDA, (202) 447-4997.

[2]*Costs and Returns of Producing Milk in the United States—1979, 1980, and Preliminary 1981.* Senate Committee on Agriculture, Nutrition, and Forestry, Committee Print 95-258 O, July 1982. The full report can be obtained from the Senate Document Room, S-325 Capitol Building, Washington, D.C. 20510.

Table 1—Milk production costs and returns per cow and per cwt of milk produced, by cost and returns items, all regions

Item	1979		1980		1981[1]	
	Per cow	Per cwt[2]	Per cow	Per cwt[2]	Per cow	Per cwt[2]
	Dollars					
GROSS REVENUE						
Milk	1540.01	11.93	1724.19	12.95	1867.95	13.72
Cull cows, calves, & replacement sales	192.01	1.49	183.58	1.38	169.80	1.25
Total revenue	1,732.02	13.42	1907.77	14.33	2037.75	14.97
DIRECT COSTS						
Feed						
Concentrates	390.34	3.02	445.61	3.35	475.15	3.49
Corn silage	73.49	.57	90.82	.68	94.71	.70
Hay	160.79	1.25	192.96	1.45	202.20	1.48
Haylage	59.19	.46	71.52	.54	79.17	.58
Pasture & miscellaneous forages	12.03	.09	14.13	.11	15.61	.11
Total feed costs	695.84	5.39	815.04	6.13	866.84	6.36
Other direct costs						
Milk hauling	37.79	.29	43.87	.33	48.74	.36
Milk marketing	11.29	.09	12.66	.10	14.04	.10
Artificial insemination	12.18	.09	13.27	.10	14.61	.11
Veterinary & medicine	23.21	.18	25.07	.19	26.93	.20
Dairy supplies	22.56	.17	24.18	.18	26.13	.19
DHIA fees	5.37	.04	5.89	.04	6.61	.05
Livestock hauling	1.98	.02	2.44	.02	2.70	.02
Custom manure hauling	.23	0	.25	0	.36	0
Fuels & electricity	34.96	.27	50.10	.38	56.00	.41
Machinery & equipment repairs	39.36	.30	43.55	.33	47.65	.35
Hired labor	95.64	.74	102.68	.77	114.87	.84
Interest on operating capital	15.02	.12	20.76	.16	25.47	.19
Overhead	11.99	.09	12.98	.10	13.97	.10
Total other direct costs	311.58	2.40	357.70	2.70	398.08	2.92
Total direct costs	1007.42	7.79	1172.74	8.83	1264.92	9.28
REVENUE ABOVE DIRECT COSTS	724.60	5.63	735.03	5.50	772.83	5.69
OWNERSHIP COSTS (RITI)[3]						
Machinery	61.69	.48	74.11	.56	86.32	.63
Buildings & equipment	122.99	.95	139.04	1.04	156.25	1.15
Livestock	179.55	1.39	236.08	1.77	263.59	1.94
Total ownership costs	364.23	2.82	449.23	3.37	506.16	3.72
Total direct and ownership costs	1371.65	10.61	1621.97	12.20	1771.08	13.00
RETURNS TO PRODUCER						
Operator & family labor	157.41	1.22	168.42	1.27	186.35	1.37
Management[4]	202.96	1.59	116.25	.86	80.32	.60
Total returns to operator, family labor, and management[5]	360.37	2.81	285.80	2.13	266.64	1.97

[1]Preliminary. [2]Hundredweight of milk represents all milk sold and consumed on the farm. [3]Replacement reserve, interest on borrowed and equity capital, taxes, and insurance. [4]Residual returns. [5]Returns to equity capital are included in ownership costs.

When producers realize or anticipate high returns, they bid up prices of factors of production—which is reflected in higher costs of production. National average dairy cow prices, for example, rose from under $500 per head in early 1977 to a peak of $1,230 in November 1980. Prices since then have declined to around $1,100 per head.

Gross dairy enterprise revenue (from sales of milk, cull cows, calves, and replacements) received by farmers averaged $14.97 per cwt of milk produced in 1981, up 4.5 percent from 1980 returns of $14.33 and 11.5 percent from 1979 returns of $13.42. Fluid milk sales accounted for about 90 percent of dairy enterprise revenue during 1979-81, while sales of cull cows, calves, and dairy replacements contributed the remaining 10 percent. After accounting for direct (cash) costs of $9.28 in 1981, dairy farmers received a return of $5.69 a cwt. This compared with returns of $5.50 in 1980 and $5.63 in 1979. After accounting for both direct and ownership costs, returns received by farmers averaged $1.97 per cwt in 1981, compared with $2.13 in 1980 and $2.81 in 1979.

Regional Revenues and Costs

Both milk prices received by farmers and milk production costs varied greatly among regions, but the range in production costs was wider than that for prices received (table 2). In 1981, for example, direct and ownership costs were estimated at $14.49 per cwt in the Appalachian region—11 percent above the U.S. average of $13. At the low end of the spectrum, direct and overhead costs in

Table 2—Milk production costs and returns by selected cost and returns items, by regions and the U.S., 1981[1]

Item	Northeast	Upper Midwest	Corn belt	Appalachia	Southern plains	Pacific	All regions[2]
				Dollars per cwt[3]			
GROSS REVENUE							
Milk	14.08	13.37	13.49	14.17	14.84	13.47	13.72
Cull cows, calves, & replacement sales	1.20	1.51	1.20	1.02	1.03	.93	1.25
Total revenue	15.28	14.88	14.69	15.19	15.87	14.40	14.97
Direct costs							
Feed costs	6.15	5.68	6.43	7.60	7.97	7.15	6.36
Other direct costs	3.12	2.60	3.14	3.42	3.19	2.73	2.92
Total direct costs	9.27	8.28	9.57	11.02	11.16	9.88	9.28
REVENUE ABOVE DIRECT COSTS	6.01	6.60	5.12	4.17	4.71	4.52	5.69
Ownership costs (RITI)[4]	3.70	4.17	4.36	3.47	2.98	2.46	3.72
Total direct and ownership costs	12.97	12.45	13.93	14.49	14.14	12.34	13.00
RETURNS TO PRODUCER							
Operator and family labor	1.43	1.68	1.96	1.09	.73	.36	1.37
Management[5]	.88	.75	−1.20	−.39	1.00	1.70	.60
Total returns to operator, family labor, and management[6]	2.31	2.43	.76	.70	1.73	2.06	1.97

[1]Preliminary. States within respective regions where dairy farmers were interviewed: Northeast (NY, PA, OH, NEW ENGLAND), Upper Midwest (MN, WI, MI, SD), Corn Belt (IN, IL, IA, MO), Appalachia (KY, TN, VA, NC, GA), Southern Plains (TX), Pacific (CA, WA). [2]Weighted average. [3]Hundredweight of milk represents all milk sold and consumed on the farm. [4]Replacement reserve, interest on borrowed and equity capital, taxes, and insurance. [5]Residual returns. [6]Returns to equity capital are included in ownership costs.

the Pacific and Upper Midwest were $12.34 and $12.45 per cwt, respectively, or about 5 percent below the U.S. average. The Corn Belt and Southern Plains regions also had relatively high costs per cwt, while the Northeast tended to have somewhat lower costs.

Feed costs were relatively higher in the Appalachian, Southern Plains, and Pacific regions and were lowest in the Upper Midwest. In contrast, ownership costs were relatively high in the Corn Belt and Upper Midwest and lowest in the Pacific and Southern Plains regions, the differences chiefly due to housing requirement differences stemming from climate.

Methods and Concepts

Data in this report are not directly comparable with costs published in prior reports. For example, previous reports used the average market price for hay in computing forage costs. In this report, using data from the 1980 dairy survey, forage budgets (corn silage, hay, haylage, pasture, and miscellaneous forages) provide estimates of costs of raising forage for each of the dairy States. The survey also provided data on the amount and type of forage fed in each dairy State, as well as the proportion of forages purchased or raised. Forage costs were developed by weighting the costs of purchased and raised forage. In previous reports, the management charge was based on 7 percent of total costs and therefore fluctuated with changes in total cost. In this report, management of the dairy enterprise and risk associated with dairying are treated as residual returns to the producer.

Land allocation costs are minimal in the dairy budgets summarized here because they include only the land base needed for the dairy farmstead. Forage budgets, however, include a cost for cropland, which is included in the forage costs. Operator and family labor is valued at the hired labor wage in this report, and is treated as a return to the producer. Operator and family labor use is based on results of the 1980 producer survey.

Production costs vary widely over time, from one farm to another, and from one State or region to another. Variability among farms is due to many factors—differences in production per cow, climate, management skills of individual producers, herd size, and the prices paid for feed, labor, and other inputs. Some operators achieve efficiencies through more intensive use of resources, especially buildings and equipment. Thus, while the costs and returns shown here and in the study are average estimates, the range of costs and returns that they encompass is broad.

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